

Claims

We claim:

1. A control station for a work vehicle, said work vehicle having an operator compartment, a chassis, a boom pivotally coupled to the chassis, a dipper pivotally coupled to the boom, an implement pivotally coupled to the dipper, at least one boom swing cylinder coupled to the boom to pivot the boom about a vertical axis, and a plurality of hydraulic cylinders including a boom lift hydraulic cylinder coupled to the boom to pivot the boom about a horizontal axis, a dipper hydraulic cylinder coupled to the dipper to pivot the dipper about a vertical axis, and an implement hydraulic cylinder coupled to the implement to pivot the implement about a vertical axis, the control station comprising:

an operator seat;

a first control tower disposed adjacent to one side of the seat, said first control tower having an upper and a lower end, said lower end pivotally coupled to the vehicle adjacent to the floor of the operator compartment to pivot generally fore-and-aft, said first control tower further comprising a first joystick operable to move at least two of said plurality of hydraulic cylinders;

a second control tower disposed adjacent an opposing side of the seat and having an upper and a lower end, said second tower having its lower end pivotally coupled to the vehicle adjacent the floor of the operator compartment to pivot generally fore-and-aft, said second control tower further comprising a second joystick operable to move at least two other of said hydraulic cylinders; and

an elongate member coupled to and between the first and second control towers to constrain said towers to pivot fore-and-aft simultaneously,

wherein each of the first and second control towers includes upper and lower members having upper and lower ends, said lower end of each of said upper members being pivotally coupled to the upper end of a corresponding one of said lower members.

2. The control station of claim 1, wherein said upper members are constrained by said lower members to pivot laterally inward toward said operator seat and laterally outward away from said operator seat.
3. The control station of claim 2 wherein the upper and lower members of each control tower are coupled together to lock together in at least 5 lockable positions.
4. The control station of claim 2 wherein the upper and lower members of each control tower are coupled together to lock together in at least 20 lockable positions.
5. The control station of claim 1 further comprising an adjuster assembly configured to lock the control towers in at least 5 different fore-and-aft pivotal positions.
6. The control station of claim 1 further comprising an adjuster assembly configured to lock the control towers in at least 20 different fore-and-aft pivotal positions.
7. The control station of claim 1, further comprising:
 - a first unitary polymeric boot covering the first control tower; and
 - a second polymeric boot covering the second control tower.
8. The control station of claim 2 further comprising an operator input device to select between at least two control patterns and an operator input device to disable the first and second joysticks.
9. A control station for a backhoe or excavator comprising:
 - an operator seat;
 - a first control tower on the left side of the seat having an upper end with a

first joystick extending therefrom, and a lower end pivotally coupled to the vehicle at the floor of the operator compartment, said first tower being constrained to pivot generally fore-and-aft;

a second control tower on the right side of the seat having an upper end with a second joystick extending therefrom, and a lower end pivotally coupled to the vehicle at the floor of the operator compartment, said second tower being constrained to pivot generally fore-and-aft; and

an adjuster assembly configured to lock the control towers in at least 20 different fore-and-aft pivotal positions.

10. The control station of claim 9, further comprising:

a first unitary polymeric boot covering the first control tower; and
a second unitary polymeric boot covering the second control tower.

11. The control station of claim 10, wherein each of the first and second control towers includes upper and lower members having upper and lower ends, said lower end of each of said upper members being pivotally coupled to the upper end of a corresponding one of said lower members, wherein said upper members are constrained by said lower members to pivot laterally inward toward said operator seat and laterally outward away from said operator seat.

12. The control station of claim 9, wherein the adjuster assembly includes at least one locking fluid cylinder.

13. The control station of claim 12, wherein the locking fluid cylinder is a gas-charged spring configured to apply a pivoting force to the first and second control towers when the locking fluid cylinder is released.

14. An operator's control station for an operator's compartment of an excavator or backhoe vehicle, said operator's compartment having an operator's seat and a floor, the station comprising:

a pair of control towers that are mechanically fixed with respect to each other to pivot fore-and-aft together about a pivot axis, said axis extending laterally across the vehicle;

a pair of joysticks coupled to the top of the pair of control towers and configured to operate a jointed arm including a boom, a dipper and a bucket; and

a pair of one-piece elastomeric boots surrounding the pair of control towers.

15. The station of claim 14, wherein the pair of control towers is disposed one on each side of the operator's seat.

16. The station of claim 14, further comprising at least one locking fluid cylinder mechanically configured to lock at least one of the pair of control towers in at least twenty different locking positions.

17. The station of claim 16, wherein the at least one locking fluid cylinder is mechanically configured to lock the pair of control towers in at least twenty different locking positions.

18. The station of claim 17, wherein the at least one locking fluid cylinder is configured to lock the pair of control towers in at least fifty different locking positions.